

## REMARKS

Claims 1-5, 24-36 and 38-42 are pending. By this Amendment, Claims 1, 4, 31 and 41 are amended and non-elected Claims 6-23, 37 and 43-65 are canceled.

### 35 U.S.C. § 112, 2<sup>nd</sup> Paragraph

In the Office Action, the Examiner rejects Claims 1-5 under 35 U.S.C. § 112, 2<sup>nd</sup> Paragraph. Applicants respectfully submit that amended Claim 1 obviates this rejection. Withdrawal of the rejection is respectfully requested.

### 35 U.S.C. § 102(b)

In the Office Action, the Examiner rejects Claims 1-5, 24-36 and 38-42 under 35 U.S.C. § 102(b) over Faiman (*A Survey of the Java Media Framework 2.0*). This rejection is respectfully traversed.

### Claim 31

In the Office Action, the Examiner asserts that numbered paragraph 3.5.2 of Faiman discloses a feature “*wherein the media engine is configured to respond to requests for rate direction changes by playing out any remaining content up to a timestamp of a direction change, discarding any data in a pipeline, setting a rate of playback and restarting playback in an opposite direction in accordance with the direction change*”, as recited in Claim 31. This assertion is respectfully traversed.

Paragraph 3.5.2 discloses that a JMF Player object can respond to a query by indicating current parameters of the Player object such as rate, media time, and duration. The duration indicates how long a particular media stream will run, if played at a default rate of 1.0 (unless the duration is unknown, as in live broadcast). This disclosure reveals nothing about how a rate direction change is to be handled.

In contrast, an example embodiment encompassed by Claim 31 and described in numbered paragraph [0061] of the present application considers a situation where a

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media engine 460 responds to requests for rate direction changes. To change the direction of playback, the media engine plays out all remaining content up to the timestamp of the direction change, then stops and discards the data in the pipeline, sets the rate, and then starts engine 460 again. All data that is repeated after starting playback in the new direction is discarded. For example, if the data is passed in blocks of 5 frames (1 . . 5 and 6 . . 10) and a direction change needs to occur at frame 3, then the media engine would play out 1, 2 then 3 and discard 4 and 5. When the engine plays backwards it would be passed the block of frames 1 . . 5 again, so it will discard frames 3, 4 and 5 and only present 2 then 1.

Numbered paragraph 3.5.2 fails to disclose or suggest any such procedure, and likewise fails to disclose or suggest “*wherein the media engine is configured to respond to requests for rate direction changes by **playing out any remaining content up to a timestamp of a direction change, discarding any data in a pipeline, setting a rate of playback and restarting playback in an opposite direction in accordance with the direction change***”, as recited in Claim 31. Accordingly, Faiman as applied by the Examiner fails to disclose or suggest Claim 31.

### **Claim 32**

In the Office Action the Examiner asserts that Faiman’s numbered paragraph 3.5 discloses a feature “*wherein data repeated after the restarting playback is discarded*”, as recited in Claim 32, which depends from Claim 31. Applicants note that Claim 32 further encompasses the embodiment and example recited in numbered paragraph [0061] of the present application (discussed immediately above with respect to Claim 31).

In contrast, paragraph 3.5 discloses starting and stopping (but not reversing) presentation of media data. In particular, paragraph 3.5 indicates that when a stopped Player object is restarted, presentation can resume from the stop time if media time is frozen, or can begin with newly-received data if the media data is a stream. Paragraph 3.5 completely fails to disclose or suggest discarding repeated data after playback is

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restarted, since none of the data mentioned in paragraph 3.5 is repeated. Accordingly, Faïman as applied by the Examiner fails to disclose or suggest Claim 32.

### **Claim 35**

In the Office Action, the Examiner asserts that Faïman's numbered paragraphs 3.2-3.4 disclose a feature "*wherein the media engine is configured to support backward decoding for coder-decoders that do not support backward decoding, the media engine configured to perform forward decoding, and reverse any decoded samples*", as recited in Claim 35. This assertion is respectfully traversed.

Paragraph 3.2 discloses user interface components, for example volume controls, download progress indicators, buttons to start, stop or pause a media stream. As noted further below, paragraph 3.3 discloses positive and negative playback rates, where a playback rate indicates how many units a JMF Player object's media time advances for every unit of "time-base time". Paragraph 3.4 discloses presenting media using a Player object, in particular preparing a Player object ahead of time so that it can begin playing media as soon as possible after a start method is invoked.

However, none of these passages disclose or suggest supporting backwards decoding for codecs that do not decode backwards, by using the codecs to decode data in a forward direction, and then reorder the decoded data by reversing the samples so that playing the reordered data is backwards playback, as encompassed by Claim 35.

Accordingly, Faïman as applied by the Examiner fails to disclose or suggest "*wherein the media engine is configured to support backward decoding for coder-decoders that do not support backward decoding, the media engine configured to perform forward decoding, and reverse any decoded samples*", as recited in Claim 35.

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## Claim 1

With respect to Claim 1, on pages 2-3 of the Office Action the Examiner asserts that Faiman's numbered paragraphs 2.1.2, 2.3.2, 3.3 and 3.5.2 disclose the feature of *"querying each of one or more functional objects in the media system to determine a functional limit of each of the one or more objects for a predetermined function"* recited in Claim 1. This assertion is respectfully traversed.

However, paragraph 2.1.2 discloses that Java Media Framework (JMF) players use classes to manage transfer of media streams, and keep track of location, protocol, and software used to transfer specific data streams. There is no disclosure of querying functional objects to determine functional limits.

Paragraph 2.3.2 discloses that a JMF processor receives an input, performs type processing on the input and outputs a resulting media stream, that can for example be provided to another device or object. A user can define the processing operations that the processor performs, which can include converting a data stream from one format to another. However, paragraph 2.3.2 fails to disclose or suggest querying functional objects to determine functional limits.

Paragraph 3.3 discloses that a playback rate indicates how many units a JMF Player object's media time advances for every unit of "time-base time", and also indicates that a positive rate indicates play in a forward direction while a negative rate indicates play in a reverse direction. Paragraph 3.3 also discloses that a particular "media time" can specify a location or read position within a media stream, and that a maximum media time defines an end of the data stream. Paragraph 3.3 also discloses that a location in a stream can alternatively be identified by specifying a particular frame in a video stream, instead of a "media time". However, paragraph 3.3 fails to disclose or suggest querying functional objects to determine functional limits.

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The Examiner also asserts on page 3 of the Office Action that Faïman's numbered paragraph 3.6 discloses a feature of "*determining which of the functional limits of the one or more objects maximally limits a capability of the media system for the predetermined function*", as recited in Claim 1. This assertion is respectfully traversed.

Paragraph 3.6 of Faïman discloses synchronizing playback of multiple media streams by associating multiple players with a same "TimeBase", and by allowing a JMF Player object to assume control over other JMF Controller objects (including Players). When a Player assumes control over a Controller (e.g. another Player), the Controller assumes the Player's time base, and the Player extends its own duration to be the longest of any objects under the Player's control.

However, a time duration of Faïman's player is not a functional limit of the player object, and a longest duration of objects under a JMF Player's command does not maximally limit a capability of a media system using Faïman's Java Media Framework. Accordingly, Faïman's paragraph 3.6 does not disclose or suggest "*determining which of the functional limits of the one or more objects maximally limits a capability of the media system for the predetermined function*", as recited in Claim 1.

Accordingly, Faïman as applied by the Examiner fails to disclose or suggest Claim 1.

## **Claim 2**

In the Office Action on page 3, the Examiner asserts that Faïman's numbered paragraph 3.6 discloses a feature of "*wherein the predetermined function is a maximum playback rate of a multimedia stream*", as recited in Claim 2. This assertion is respectfully traversed.

As noted further above, Faïman's paragraph 3.3 discloses a playback rate that can be positive (forward play) or negative (reverse play). However, this citation completely

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fails to disclose determining which functional limits of objects in a media system maximally limit a capability of the media system, as encompassed by Claim 1, “*wherein the predetermined function is a **maximum playback rate** of a multimedia stream*” as recited in dependent Claim 2. Accordingly, Faiman as applied by the Examiner fails to disclose or suggest Claim 2.

### **Claim 3**

In the Office Action, the Examiner asserts that Faiman’s numbered paragraphs 3.3, and 3.5.2 disclose “*determining a minimum of the maximum reported playback rates*” as recited in Claim 3. This assertion is respectfully traversed.

As noted above, paragraph 3.3 merely discloses that a playback rate can be positive or negative. Paragraph 3.5.2 discloses that a JMF Player can respond to a query by indicating its current parameters such as rate, media time, and duration. The duration indicates how long a particular media stream will run, if played at a default rate of 1.0 (unless the duration is unknown, as in live broadcast). Neither paragraph discloses reporting a *maximum* playback rate, and both paragraphs likewise fail to disclose or suggest “*determining a minimum of the maximum reported playback rates*” as recited in Claim 3. Accordingly, Faiman as applied by the Examiner fails to disclose or suggest Claim 3.

### **Claim 4**

In the Office Action, the Examiner asserts that Faiman’s numbered paragraph 3.3 discloses “*determining a minimum playback rate and the maximum playback rate in a set of modes including: reverse skip mode, reverse key frame mode, reverse full mode, forward full mode, forward key frame mode, forward skip mode*”, as recited in Claim 4. This assertion is respectfully traversed.

As noted above, paragraph 3.3 discloses a playback rate that can be positive (forward play) or negative (reverse play). However, this paragraph provides no further

details regarding playback rate, much less any of reverse skip mode, reverse key frame mode, forward key frame mode, or forward skip mode. Numbered paragraph 3.3 likewise fails to disclose or suggest determining a minimum playback rate and a maximum playback rate in any of these modes, or in reverse full mode or forward full mode.

Accordingly, Faiman as applied by the Examiner fails to disclose or suggest *“determining a minimum playback rate and the maximum playback rate in a set of modes including: reverse skip mode, reverse key frame mode, reverse full mode, forward full mode, forward key frame mode, forward skip mode”*, as recited in Claim 4.

#### **Claim 5**

In the Office Action, the Examiner asserts that Faiman’s numbered paragraph 2.3.2 discloses a feature *“wherein the one or more functional objects include a media source object, a transform object, and a media sink object”*, as recited in Claim 5. This assertion is respectfully traversed.

As noted further above, paragraph 2.3.2 discloses that a JMF processor receives an input, performs type processing on the input and outputs a resulting media stream. A user can define the processing operations that the processor performs, which can include converting a data stream from one format to another. However, paragraph 2.3.2 fails to disclose or suggest *“querying each of one or more functional objects in the media system to determine a functional limit of each of the one or more objects for a predetermined function”*, as recited in Claim 1, and further fails to disclose or suggest that *“the one or more functional objects include a media source object, a transform object, and a media sink object”*, as recited in dependent Claim 5. Accordingly, Faiman as applied by the Examiner fails to disclose or suggest Claim 5.

#### **Claim 24**

With respect to Claim 24, the Examiner asserts that numbered paragraphs 2.1.2, 2.3.2, 3.3, 3.5.2, 3.6, 4.1 and 4.2 of Faiman discloses a feature of *“a media engine*

*component configured to **query** each of one or more core layer components in the multimedia system to **determine a functional rate limit of each core layer component for a predetermined function, the media engine configured to determine which of the functional limits of the core layer components maximally limits the multimedia system***", as recited in Claim 24. This assertion is respectfully traversed.

As noted further above with respect to Claim 1 which recites similar features, paragraphs 2.1.2, 2.3.2, 3.3, 3.5.2, 3.6 of Faiman are lacking.

Paragraph 4.1 of Faiman discloses creating a Java Media Framework "Processor" object, including a user identifying a data source, a Uniform Resource Locator (URL), or a "MediaLocator" as the Processor's media location. Paragraph 4.1 also discloses that a JMF "Manager" can implicitly find a capture device for capturing audio, and create a Processor for encoding into audio features. However, this disclosure in paragraph 4.1 neither recites nor suggests determining functional rate limits of core layer components and determining which of the functional limits maximally limits a multimedia system, as encompassed by Claim 24.

Paragraph 4.2 of Faiman discloses configuring a JMF "Processor". The configuring can be done in several steps, and can include selecting plug-ins to process tracks of a media stream. Paragraph 4.2 also discloses that a user can specify a format of data output by the Processor. However, paragraph 4.2 neither recites nor suggests determining functional rate limits of core layer components and determining which of the functional limits maximally limits a multimedia system, as encompassed by Claim 24.

Accordingly, Faiman as applied by the Examiner fails to disclose or suggest Claim 24.

#### **Claim 25**

With respect to Claim 25, the Examiner asserts that numbered paragraphs 2.3.2, 2.1.2, 4.1-4.3, 4.6 and Figure 5.2 disclose "*wherein the core layer includes: one or more media sources coupled to the control layer, the media sources configured as inputs to the*

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*multimedia system; one or more **stream sources** coupled to the control layer, the stream sources providing the media data streams; one or more **transforms** coupled to the control layer, the transforms configured to operate on the media data streams; one or more **media sinks** coupled to the control layer, the media sinks configured to operate as outputs for the media data streams; and one or more **stream sinks** coupled to the control layer, the stream sinks configured to store or render the media data streams”, as recited in Claim 25. This assertion is respectfully traversed.*

Some of the features in Claim 25 are similar to those recited in Claim 5. As noted further above with respect to Claim 5, Faiman’s numbered paragraphs 2.1.2, 2.3.2, 4.1 and 4.2 fail to disclose features recited in Claim 5, and therefore likewise fail to disclose similar features recited in Claim 25, in particular the one or more media sources, transforms, and media sinks recited in Claim 25 and associated with the features of Claim 24.

Faiman’s paragraph 4.3 discloses writing media to a file, and paragraph 4.6 disclose capturing media data while Figure 5.2 of Faiman shows a Processor between a data source and a file, and a Processor between a data source and a capture device with a Session Manager connecting the data sources to a network. However, these disclosures do not disclose all features of Claim 25, for example both media sources and stream sources, and likewise fail to disclose or suggest all features of Claim 24 from which Claim 25 depends.

Accordingly, Faiman as applied by the Examiner fails to disclose or suggest Claim 25.

#### **Claim 27**

In the Office Action, the Examiner asserts that Faiman’s numbered paragraphs 3.3, and 3.5.2 disclose a feature “*wherein the media engine interacts with a plurality of components in the core layer and the control layer to provide rate changes and rates, the*

*media engine configured to use floating point values to linearly indicate a speed of playback*” as recited in Claim 27. This assertion is respectfully traversed.

As noted above, with respect to Claim 3, paragraph 3.3 merely discloses that a playback rate can be positive or negative. Paragraph 3.5.2 discloses that a JMF Player can respond to a query by indicating its current parameters such as rate, media time, and duration. The duration indicates how long a particular media stream will run, if played at a default rate of 1.0 (unless the duration is unknown, as in live broadcast).

Neither paragraph 3.3 nor paragraph 3.5.2 discloses providing rate *changes*, and therefore these paragraphs fail to disclose or suggest “*wherein the media engine interacts with a plurality of components in the core layer and the control layer to provide rate changes*” as recited in Claim 27. Accordingly, Faïman as applied by the Examiner fails to disclose or suggest Claim 27.

#### **Claim 29**

In the Office Action, the Examiner asserts that Faïman’s numbered paragraphs 3.7-3.8 disclose a feature “*wherein the core layer further includes a media source, the media source configured to provide a presentation timestamp for media samples on the media stream, the samples configured to preserve the presentation timestamp independent of a rate for media playback*”, as recited in Claim 29. This assertion is respectfully traversed.

Faïman’s paragraph 3.7 discloses presenting a media stream in applets and applications using MediaPlayer Java Bean, to play a series of media clips or allow a user to select a media clip for play. Paragraph 3.8 discloses presenting media using RTP media streams, in particular a JMF Player object automatically processing payload changes (*i.e.*, a different media format being transmitted over the RTP session). However, neither of these disclosures recites or suggests a presentation timestamp, nor samples configured to preserve the presentation timestamp independent of a rate for media playback.

Accordingly, Faiman as applied by the Examiner fails to disclose or suggest *“wherein the core layer further includes a media source, the media source configured to provide a **presentation timestamp** for media samples on the media stream, the **samples configured to preserve the presentation timestamp independent of a rate for media playback**”, as recited in Claim 29.*

#### **Claim 30**

In the Office Action, the Examiner asserts that Faiman’s numbered paragraphs 3.3, 3.4, 4.0 disclose a feature *“wherein the multimedia system further includes a presentation clock configured to run time according to a current rate, and the core layer further includes one or more media sinks coupled to the presentation clock, the media sinks configured to display data according to the presentation clock and independent of non-presentation clock component timestamps”, as recited in Claim 30.* This assertion is respectfully traversed.

As noted further above, paragraph 3.3 discloses positive and negative playback rates, where a playback rate indicates how many units a JMF Player object’s media time advances for every unit of “time-base time”. Paragraph 3.4 discloses presenting media using a Player object, in particular preparing a Player object ahead of time so that it can begin playing media as soon as possible after a start method is invoked. Paragraph 4.0 generally discloses capturing and processing time-based media, for example by encoding and multiplexing captured data. However, none of these citations appear to disclose or suggest *“one or more **media sinks coupled to the presentation clock, the media sinks configured to display data according to the presentation clock and independent of non-presentation clock component timestamps**”, as recited in Claim 30.* Accordingly, Faiman as applied by the Examiner fails to disclose or suggest Claim 30.

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#### Claim 34

In the Office Action, the Examiner asserts that Faiman's numbered paragraphs 3.0-3.1 disclose a feature "*wherein one or more components in the core layer are configured to maintain a list of pending rate changes, each component having active only one rate at a time, each component configured to maintain a playback rate independent of tracking rate changes*", as recited in Claim 34. This assertion is respectfully traversed.

Paragraph 3.0 discloses using a different Player object to present each media stream, and discloses synchronizing playback presentation of media streams by allowing one of the Player objects to control operation of the other Player objects. Paragraph 3.1 discloses creating a Player object and then shifting it among states of "unrealized", "realizing", "realized", "prefetching", "prefetched", and "started".

However, neither of these passages of Faiman discloses or suggests maintaining a list of pending rate changes, and neither passage discloses or suggests each component having active only one rate at a time. Paragraph 3.0 discloses a Player object presenting only a single media stream, but that does not preclude that Player object from having more than one rate active at a time (e.g., in a situation where a component begins acting on a second rate change before it has finished completing a first rate change). Faiman is also silent as to maintaining a playback rate independent of tracking rate changes.

Accordingly, Faiman as applied by the Examiner fails to disclose or suggest "*wherein one or more components in the core layer are configured to maintain a list of pending rate changes, each component having active only one rate at a time, each component configured to maintain a playback rate independent of tracking rate changes*", as recited in Claim 34.

**Claims 38-42**

In the Office Action the Examiner rejects Claims 38-42 for the same reasons under which Claims 1-5 are rejected. As discussed further above, Claims 1-5 are allowable over Faiman. Applicants respectfully submit that Claims 38-42 are likewise allowable for at least the same reasons.

**Claims 26, 28, 33, 36**

Claims 26, 28, 33 and 36 depend from allowable Claim 24, and are likewise allowable for at least the same reasons.

For at least the above reasons, withdrawal of the rejection of Claims 1-5, 24-36 and 38-42 under 35 U.S.C. § 102(b) over Faiman is respectfully requested.

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### **Conclusion**

Applicant respectfully submits that the application is in condition for allowance. Favorable consideration on the merits and prompt allowance are respectfully requested. In the event any questions arise regarding this communication or the application in general, the Examiner is invited to contact Applicant's undersigned representative at the telephone number listed below.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicants hereby request any necessary extension of time. If there is a fee occasioned by this response, including an extension fee that is not covered by an enclosed check please charge any deficiency to Deposit Account No. 50-0463.

Respectfully submitted,  
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/Noemi Tovar/  
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